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--21. Installation for the filtration of water by membranes, comprising a raw water inlet, connection to a drain, a means of outlet of produced water, the membranes being immersed in a filtration volume filled with water to be filtered, whose height of water above the said membranes is adapted to create a differential pressure sufficient to provoke the filtration through these membranes, wherein the membranes are of the fibre type¹² with outer skin substantially disposed in a U-shape, whose two open ends are located at the bottom, the potting being carried out at the low point of the said membranes,

wherein the membranes are disposed in cylindrical containers thus forming modules, each module comprising a raw water feed pipe connected to the top section of the module.

22. Installation according to Claim 21, wherein the potting of the two ends of a same membrane is carried out at the same point.

23. Installation according to Claim 21, wherein the maximum pressure difference created in the filtration volume is approximately 0.6 bar.

24. Installation according to Claim 23, wherein the nominal pressure difference in the filtration volume is between 0.4 and 0.5 bar.

25. Installation according to Claim 24, wherein the membranes are disposed in membrane modules.

26. Installation according to Claim 25, wherein the membrane area of each module is substantially 125 m².

27. Installation according to Claim 26, wherein the modules are cylindrical containers substantially having a diameter of 30 cm and a length of 80 cm.

28. Installation according to Claim 25, wherein the modules are disposed substantially at the bottom of a basin.

29. Installation according to Claim 28, wherein the modules are gathered in groups around means of collection of water coming from the filtration, to which they are connected.

30. Installation according to Claim 29, wherein each group comprises two substantially parallel lines of 10 modules.

31. Installation according to Claim 25, wherein the modules are disposed substantially vertically.

32. Installation according to Claim 31, wherein the means of feeding the modules with raw water are feed pipes whose free ends are located substantially at mid-height of the filtration basin.

33. Installation according to Claim 32, wherein the feed pipes are, at their free ends, oriented downwards and in that the installation comprises evacuation channels located under the ends of these feed pipes, the said channels being connected to a drainage valve discharging into the drain.

34. Installation according to Claim 29, wherein each collector means comprises a valve separating this collector means from a means of transfer of the produced water to a produced water outlet valve and a storage means.

35. Installation according to Claim 34, wherein it comprises a line for the re-injection of produced water into the transfer means upstream of the produced water outlet valve and a re-injection pump located on this line.

36. Installation according to Claim 35, wherein it comprises a station for the injection of chlorine and a station for the injection of soda discharging into the re-injection line.

37. Installation for the filtration of water by membranes according to Claim 25, wherein the membrane modules are disposed at the bottom of a dry compartment, and in that the modules are fed by gravity with water to be filtered by closed pipes, these pipes also serving for conveying the backwashing water.

38. Method of filtration of water by immersed membranes, of the ultrafiltration membrane type, the filtration through the membranes being carried out using, as a source of differential pressure, the height of water present in the basin in which the membranes are immersed and are of the fibre type with outer skin, potted at the low point of the said membranes,

wherein the membranes are disposed in cylindrical containers thus forming modules, each module comprising a raw water feed pipe connected to the top section of the module.

39. Method of rehabilitation of an existing water purification unit of the so-called sand basin type, comprising a basin provided with a bottom floor, an intermediate floor on

which the sand bed stands, a raw water inlet, wherein comprising stages of removal of the sand bed, of destruction of the intermediate floor, of installation of at least one intermediate channel for the evacuation of washing sludges located substantially at mid-height of the filtration basin and closed by a valve discharging into the drain, of installation on the bottom floor of a series of membrane ultrafiltration modules, the membranes being of the fibre type with outer skin potted at their low point, disposed in containers and the operating pressure of these membranes being created by the height of raw water stored in the basin above these membranes.

40. Method of rehabilitation according to Claim 39, wherein it further comprises a phase of testing the integrity of the membranes of a group comprising the following stages:

closing the produced water valve of a collector,
injection of compressed air into the collector of the group,
emptying by reverse filtration ("permeation") of the water contained on the permeate side,
stopping the compressed air supply,
measuring the pressure drop.

41. Installation according to Claim 22, wherein the maximum pressure difference created in the filtration volume is approximately 0.6 bar.

42. Installation according to Claim 26, wherein the modules are disposed substantially at the bottom of a basin.

43. Installation according to Claim 27, wherein the modules are disposed substantially at the bottom of a basin.

44. Installation according to Claim 26, wherein the modules are disposed substantially vertically.

45. Installation according to Claim 27, wherein the modules are disposed substantially vertically.

46. Installation according to Claim 28, wherein the modules are disposed substantially vertically.

47. Installation according to Claim 29, wherein the modules are disposed substantially vertically.